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JAPAN'S ECONOMY: A TRANSFORMATION?

SUMMARY

Many of the characteristics that have qualified Japan's economic performance as an "economic miracle" are now in the midst of a transformation that is moving Japan from its outlier position among the advanced economies to a more regular member of the league. The nation's high rates of saving, investment, productivity increase and — above all — economic growth are declining. In addition, a shrinking labor force implies a higher relative growth of wages and a shift of national income to labor. Drawing implications on how these separate strands might influence future developments — particularly in Japan's economic and political roles in the world and its relations with the United States — is a speculative venture, subject to a variety of domestic realignments that could disrupt the predictions and confound the analysis.

Japan's Economic Miracle

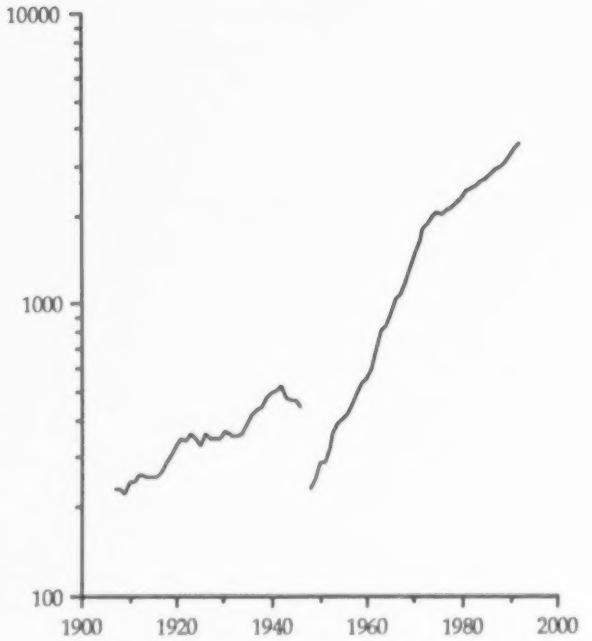
Japan's postwar economic development occurred in two distinct phases, with 1970 marking the approximate dividing line. From 1946 to 1970 Japan's economy grew very rapidly, experiencing a peak period between 1953 and 1969 (see Figure). Inflation-adjusted gross national product per capita expanded 8.9 percent per year from 1946 to 1970, while for the subperiod growth averaged an astounding 9.2 percent. After the oil crisis in 1973 Japan entered a new phase in which per capita growth slowed to 3.3 percent annually for the years through 1990. Because of the structural changes now occurring, a new phase of even slower growth over the next decade or more is highly likely.

Aggregate economic growth flows from two main sources: the expansion of inputs, such as capital and labor, and the growth of productivity in using those inputs. According to one review of the factors contributing to Japan's 8.3 percent average annual real GNP growth rate from 1960 to 1979, the increase of capital inputs accounted for about 5 percentage points, labor added a further 1.5 points and productivity improvements chipped in nearly 2 points.[1] The postwar economic surge in Japan was marked by a virtuous circle of mutually reinforcing, growth-promoting behavior — some of which was encouraged by government policy. Very high domestic household savings, for example, were

channeled to industry through a controlled and regulated financial system. In turn, industry invested its own funds plus household savings in new plant and equipment that embodied up-to-date technology. The swift growth of the stock of modern capital in an economy that lagged world productivity leaders led to rapid productivity improvements. Completing the circle, the enormous investments in more productive capital acted with a growing and better educated work force to generate the economic growth rates shown in the figure.

Japan's GNP Per Capita in 1985 Prices

(in thousands of yen)



Note: A break in the data occurs in the first postwar year of 1946.

Source: For 1905-70 period Kazushi Ohkawa and Henry Rosovsky, *Japanese Economic Growth* (Stanford, California: Stanford University Press, 1973), pp. 280-281. For 1971-90 period Management and Coordination Agency, Statistics Bureau, *Japan Statistical Yearbook*, various years.

Government policy and laws encouraged savings, restricted the outflow of capital and tied domestic savings to domestic investment. Other regulations during that high-growth period protected many Japanese industries from the competition of more efficient foreign producers. Why did protection in Japan promote efficiency and productivity when in so many other countries similar policies resulted in monopolized markets and loss of competitiveness? Protection in Japan allowed companies in some industries, such as automotive manufacturers, to expand capacity or enter new markets with sometimes wild abandon because they had ready access to capital via the regulated financial markets. For example, the 1953 imposition of protective barriers in the motor vehicle market had attracted the entry of 11 companies by the end of the decade. Despite the government's interest in whittling down the competition in this industry, these companies fought for a total annual market that in 1955 was equivalent to one day's output of the U.S. automotive industry. Fierce domestic competition in cars and trucks and in many other industries stimulated production innovations and efficiencies that continue to have echoes worldwide.

Japanese government policy had mixed effects on economic growth. Some of these effects were unintended — for example, the fierce, "excessive," efficiency-generating competition, which resulted from the easy access to capital enjoyed by certain industries. In other cases, policy was ignored, as illustrated by the automobile industry's dismissal of government guidance. In still other cases, government imposed costs on business and society through its regulation of such service sectors as transportation and communication. At this stage of knowledge, the net effect of government on Japanese economic development must remain a question.

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Most of the elements of the virtuous circle making up the Japanese miracle now are responding to new forces in Japanese society and to pressures from Japan's foreign partners and competitors. As these underlying factors undergo change, the country will embark on a new growth path, established by the transformation of savings, labor supply, investment and productivity growth in Japan (see *JEI Report* No. 4A, January 31, 1992, and *JEI Report* No. 37A, October 4, 1991).

Household Savings

The savings of Japanese households have been a primary engine driving the spectacular growth of the post-World War II Japanese economy. The ratio of household savings to disposable income has been among the highest in the industrial world; only Italy has outpaced Japan in selected years. From 1965 to 1974, for example, Japanese saved 17.9 percent of their disposable income; the comparable figure for the United States was 7.8 percent.[2] Adjustments to Japanese and American data to correct for differences in definition and for conceptual shortcomings reduce the gap between the two countries by about 4 to 5 percentage points.[3] In the single year of 1974 Japan's households saved almost one-quarter of their disposable incomes. That year, however, marked the high point of the postwar era. Since then the overall trend has been steadily downward, sinking to 18 percent in 1980, 16 percent by the middle of the decade and 14 percent by 1990. Most economic forces continue to push household savings rates lower, with few factors working in the other direction.

Demographics - Retired people in general save less than younger, working-age people, and the proportion of the Japanese population that is elderly is growing. Cross-national analyses on the whole find strong evidence for the effects of age on the savings rate, typically showing that the ratio of the population aged 65 and over to the working-age segment of 20- to 64-year-olds has a significant negative impact on the household savings rate. Such an impact usually is harder to discern in a single country's experience. Several studies indicate, however, that Japan's relatively young population in the 1970s accounted for 4 to 7 percentage points of the difference in the savings rate between Japan and the average experience of the developed nations belonging to the Organization for Economic Cooperation and Development.[4] Since the population replacement rate is dropping in Japan, the number in the prime working-age group will begin to decline because more people will reach retirement age than will enter the work force. Many analysts predict that this demographic trend will push down future Japanese savings rates. Others dispute the strength of this effect, noting that retired Japanese continue to save, although at a lower rate than in their wage-earning years.

Slower Economic Growth - Rapid economic growth is strongly associated with higher savings in studies based on cross-national experience. One study by the Massachusetts Institute of Technology's Franco Modigliani and Arlie Sterling found that the high rate of Japan's per capita income growth was by far the most important cause of the nation's high private savings rate. They estimated that per capita income growth yielded an 11 percentage point difference between Japan's rate and the average for the other sample countries.[5] Statistical evidence based on a single country's behavior over time has produced mixed results at the detailed level but generally indicates that a high growth rate produces a high savings rate. As noted above, Japan's real annual GNP per capita growth rate has fallen steadily from its 1953-69 peak rate; all indications are that aggregate economic growth will continue to slow. (This will be discussed in more detail below.) Although the specific mechanisms through which income growth influences household savings still are not clear, the sharp downward trend in Japan's economic growth foretells a powerful depressing effect on savings.

Share of Self-Employed Workers - Throughout the first decade of the postwar period the share of income generated by self-employed workers in Japan was quite high by international standards. In 1955 private unincorporated entrepreneurs earned 37 percent of national income. The savings rate of the self-employed generally is higher than that of any other group, primarily because of greater income fluctuations and the need to save for business downturns, illness and retirement. Over the years, though, the self-employed population's share of national income in Japan declined steadily

as more workers were absorbed into the corporate business sector. By 1975 the share had fallen to 17 percent; in 1988 it was 10 percent. The number of self-employed and their share of national income will continue to decline in step with the steadily widening gap between the income of employees and the self-employed — a gap that has grown since the late 1970s and that in consequence has diminished the incentive to go into business for one's self.[6] There is no indication of a future shift out of the salaried employees' ranks that could raise the savings rate.

Other Influences on Savings - Use of consumer credit has spread rapidly in Japan since the late 1970s; outstanding amounts of consumer credit in the household sector grew from 6.7 percent of disposable income in 1976 to 15 percent in 1987. Projections of credit use indicate that Japanese levels could approach American values by 1995.[7] The significance of the increased use of credit is not only that savings are depressed during the credit growth period because credit substitutes for savings but that credit can be used for emergencies and other unplanned expenditures, thereby reducing the need for precautionary savings.

The central government also has removed several tax breaks for savings that were prevalent through the 1980s. Interest income from bank deposits, bonds and other investments, for example, was exempt from income tax. Additionally, interest from postal savings accounts and from national and local government bonds also was tax-exempt.[8] Interest on deposits up to ¥5 million ($37,000 at ¥135=$1.00) in Employee Property Formation Accounts also was exempt. Taking the various exemptions into account, each individual was eligible for tax exemptions on interest income of ¥14,500,000 ($107,400). In addition, other types of returns from personal savings efforts, such as capital gains on land, housing and equities, were largely tax-free.[9] Moreover, unlike in the United States, Japanese consumers received no tax breaks for borrowing; interest paid on mortgages and consumer loans was not tax-deductible. In 1988, however, most of the tax breaks on savings were abolished; capital gains, however, continues to receive favorable tax treatment, although reduced from past levels. Pressures from abroad now are aimed at reducing these tax advantages even further, with the express purpose of boosting consumption in Japan.

Japan's public pension system, which was quite weak through 1973, has been upgraded substantially since then and now is comparable to systems in other developed countries. Inadequate public pensions typically induce private savings to meet retirement needs. Even when a new public scheme is introduced, a generation usually passes before participants feel confident in the system and change their savings behavior. The current generation in Japan now appears to be relying on the public system for a good share of its retirement benefits. Analysis by the OECD indicates that public pension benefits have had a significant, increasingly depressive, effect on Japanese savings since 1973. This effect has been greatest for those with the longest history in the system and, therefore, is likely to grow in the future.[10]

Finally, most observers of Japanese society note that the generation now in its 20s is more consumption-oriented than the previous generation. These younger people certainly are greater users of credit and can be seen thronging department stores and airline counters. The balance of individual debt for the under-24-year-old segment of the population increased more than fourfold between 1988 and 1990; members of the younger generation are credited with being the biggest users of credit cards.[11] Abetting this apparent change in attitudes is a slow reduction in annual working hours; present government and business policy promotes an accelerated timetable to reduce working hours to 1,800 a year. Increased leisure time would be a complement to higher consumption and reduced savings.

All the forces outlined above are pushing the household savings rate down. The Economic Planning Agency has projected a household savings rate of 11.5 percent by the end of the decade — a level that would bring Japan into line with European experience but still be substantially above the U.S. rate. By the year 2010 the government has forecast a level of 9 percent; private economists think that it could be even lower.[12]

Declining Labor Force

As mentioned above, the proportion of older Japanese in the population is growing. As a consequence, the number of people in the so-called productive age group of 15 to 64 will begin to decline in 1995; within 10 years that slice of the population is projected to be about 4 percent below the 1994 peak.[13] This decline is comprised of two parts: the number of people entering the labor force and the number retiring. The number of 20-year-olds, for example, will cease growing and actually decline in 1994; by the year 2000 their absolute number will be smaller than in 1950 in a total population that will be 60 percent larger. On the other side of the population distribution curve the number of people over 65 has been increasing for several decades; the 1989 percentage of those over 65 in the total population was 11.4 percent — double the 1960 ratio. By the year 2000 this proportion will increase to 17 percent. Thus, the working-age population is being squeezed at both ends.

Greater labor force participation can alleviate some of these declines. Female workers, in particular, have contributed the bulk of the labor force growth since 1975, with rates of increase double those of males — 4.9 percent versus 2 percent in 1990, for example.[14] The Japanese female labor force participation rate of 50.1 percent in 1990 was a shade under the U.S. figure of 52.5 percent. The major difference between American and Japanese female labor force participation occurs in the child-bearing years. According to surveys, a large number of these Japanese women wish to work but are unable to do so because of a lack of day-care facilities and sufficiently generous maternity leave.

The total male labor force participation rate is higher in Japan at 77 percent than the comparable American figure of 71.5 percent. If the American male work experience is used as a guide to possible Japanese trends, there appears to be little expansion capacity in Japanese male labor force participation. The Japanese economy, therefore, will face an absolutely declining number of workers unless major policy changes induce a substantial move by women into the labor force to compensate for the falling number of potential workers caused by the shrinking birth rate and the aging of the population.

Financial Market Deregulation and Globalization

Until the mid-1970s Japan's financial sector was regulated extensively. Rigid rules confined financial institutions to specific functions and specialized services. Interest rates, too, were strictly regulated, and tight controls restricted international capital movements. Moreover, competition among and within financial subsectors was controlled closely. This structure prevented firms from being exposed to the market cost of capital; their investment decisions often seemed to bear little relation to an underlying economic rationale. It was under this financial regime that the economywide capital-labor ratio tripled from 1960 to 1970 and doubled again in the next 10 years.[15]

This regulated structure began to crumble in the mid-1970s as economic, political and international pressures made the old system too costly to continue. These pressures included: the sharp rise in Japanese government debt (which could not be marketed under the tightly controlled existing regime), the breakdown in the Bretton Woods fixed exchange rate system and the rapid involvement of Japan in the world trading system. As one barrier after another was removed, market forces created new pressures for still greater deregulation. Negotiations with the United States in 1984 on financial deregulation added more stimulus for change. By the mid-1980s greater international competition in financial services — abetted in part by advances in telecommunications and computing technology — increased the need for freer and more flexible financial markets.[16]

Although many controls still remain, by and large Japanese companies now confront a market cost of capital. More than that, to a large extent the cost is determined globally. There is little or no advantage to a Tokyo, London or Minneapolis firm, for example, in raising short-term yen in one or another world market. Long-term corporate markets, though, still seem to be somewhat segmented and defined by national boundaries — a point that will be addressed later.

Deregulation of Other Markets

In addition to financial markets, several other hitherto controlled and regulated sectors of Japan's economy are in the process of liberalization. Telecommunications services, air transport and rail transport have been privatized, demonopolized and opened to price competition and new market entrants. Restrictions on large-scale retail trade are being relaxed. Government agencies are scrutinizing more carefully bid-rigging and cartels in construction. Agricultural sectors, such as oranges, now are facing international competition after a long protected history. These changes come about 20 years after businesses in most industries had adjusted to the removal of the protective umbrellas from their products.

This series of openings and liberalizations largely arose from domestic economic and political forces. In brief, more benefits usually accompanied deregulation than would be lost from disrupting the status quo — generally, much more. Businesses in the competitive, trade-oriented industries, in particular, were burdened by the high-cost, inefficient regulated sectors on which they had to depend for supplies and services. Those Japanese politicians who recognized the potential gains to constituents supported the transitions while seeking the necessary political exchange to satisfy the inevitable losers. Although the process often required years of perseverance against other political groups, bureaucratic interests and formerly protected parties that benefited from the status quo, the past 20-year period has seen a steady dismantling of controls. Foreign pressures often helped to push or steer these bandwagons, but without domestic support foreigners would have made little headway on their own.[17]

Since many trade barriers ultimately rest on some regulatory foundation, the gradual liberalization of the domestic economy has had international repercussions. It is difficult today to find a single example of higher barriers (formal or informal) to international trade than existed in the past. Although many barriers remain, the cumulative effects of these deregulations have been to make Japanese markets more open and more competitive for both domestic and foreign firms.

The End of Productivity Catch-Up

In recent years economic researchers have tried to explain the newly discovered phenomenon of productivity catch-up, whereby countries that lag behind the leading countries' productivity levels exhibit growth rates in productivity proportional to their relative backwardness. Since 1945 a remarkable convergence has occurred in the economywide productivity levels of the industrialized economies. In 1950, for example, Japan's productivity was only one-fifth of the most advanced country — the United States. By 1979 Japan's productivity had zoomed to a level only 27 percent below America's.[18]

Just being behind, however, does not guarantee the benefits of automatic growth. Several preconditions appear to be necessary: economic and political stability, international product and technology flows, and an efficient domestic market. Given these conditions, the most important means by which world-class product technology and production methods are introduced into an economy is through investment. All the necessary conditions were present in Japan in the post-World War II period — especially the rapid rate of investment, which had a multiplicative effect on the simple advantage of being a laggard. Because of the very rapid growth of the capital stock, the average age of Japan's capital was an estimated youthful 10 years in 1979, compared to 17.3 years in the United States. Relatively young capital, on average, incorporates more recent technology and is more productive than older capital.

Productivity catch-up, however, cannot continue indefinitely; with luck and effective policies, economies catch up with the leaders. This happens more and more slowly as their levels converge. Moreover, investment cannot outpace the growth of the overall economy forever; capital spending eventually would absorb the entire national output. Japan is a case in point. According to a study by Harvard University's Dale Jorgenson and Masahiro Kuroda of Keio University, productivity growth in

Japanese industry in the 1960s was a phenomenal 4.1 percent per year; this pace slowed to only 0.16 percent in the 1970s. By the 1980s productivity levels barely improved at all.[19]

Related to the growth in productivity in the 1960s, investment in plant and equipment reached 21 percent of GNP in 1970 — meaning more than one out of every five yen of output flowed back into investment. By 1980 private nonresidential investment had fallen to 15.7 percent of GNP. It hovered around this level until the asset boom of the bubble economy in the late 1980s. Between 1988 and 1991 investment climbed once again to 20 percent of GNP.

This recent massive quantity of investment in plant, equipment, and research and development was qualitatively different from the earlier experience. For one thing, financial market liberalization meant that firms faced real interest rates; they now had to balance these financing costs against the returns from investing their funds. Studies by the Bank of Japan indicate that Japanese firms have become exquisitely sensitive to the returns on different types of assets. "Rates of return on financial assets have come to be a meaningful yardstick for opportunity cost of fixed investment. These changes in corporate finance, both in financing and in investment, have tended to widen the avenue through which interest rates influence business expenditure," according to a 1991 BOJ report.[20]

In the late 1980s, investment was stimulated by the run-up in asset prices and the consequent low cost of raising capital on financial markets. With the real cost of funds on the Tokyo Stock Exchange running close to zero or even negative, many investment and R&D projects looked like good bets since the public essentially was paying industry to take its money.[21] The returns on these investments consequently fell sharply as companies slid down their yield curves. Although the volume of Japanese investment in these years often has been cited as a replay of the Japanese economic miracle, the real contribution to future returns and productivity is likely to be meager. As the capital-output ratio has grown, larger and larger increments have been necessary to generate a unit of output.[22]

Japan is now among the technology leaders in the world. Its businesses no longer have the luxury of copying, licensing, observing, buying or borrowing from the leaders as they once did. They have to take their chances on the frontier, and there is no evidence that they make better bets than their foreign counterparts. The nation's capital-output ratio also is up among the world's leaders. Contributions from an increased flow of capital into production is yielding diminishing marginal returns. The period of productivity catch-up is over as Japan joins the ranks of the mature economies.

Implications: Pulling the Strands Together

Household savings influence two important activities: investment and trade balances. When Japan's domestic financial market was shut off from the rest of the world, investment depended on domestic savings; Japanese households were the principal source of net national savings.[23] Although deregulation and globalization of financial markets have weakened these ties substantially, domestic private investment still depends somewhat on domestic private savings.[24] To the extent that national boundaries matter in corporate access to investment funds, a declining share of domestic savings out of national income will constrain future Japanese investment.

A nation's net trade balance depends on the difference between aggregate income generated from production and expenditures. If a country spends more than it earns, that country will be a net importer and run a trade deficit, and vice versa. Some algebra applied to this relationship shows that a nation with positive net national savings (savings minus investment) will show a trade surplus. Trade balances, therefore, depend critically on the domestic savings-investment balance.[25] A fall in savings will drive real interest rates higher than they otherwise would be, with a downward effect on investment. Whether domestic investment falls even faster than household savings will depend as well on corporate and government savings and on other forces motivating investment.

When we consider the effects of the demographic changes, it does not require sophisticated economic analysis to suggest that a contracting labor force together with a growing economy implies higher real wages. Unless the productivity of labor can increase fast enough to neutralize the cost effects of higher wages, higher unit labor costs and a higher share of employee compensation in national income are likely results.

Productivity gains can come about from several sources: higher quality labor, more capital per labor hour, more productive capital or better ways of doing things (so-called disembodied technical change). Upgrading the labor force, mainly through improved educational levels, contributed about 1 percentage point of the gains in Japan's annual total factor productivity from 1960 to 1979, according to Harvard University's Mr. Jorgenson.[26] His calculations indicated that contributions from this source fell by more than half in the 1970s compared with the 1960-73 period. "Reduction in the rate of upgrading of the labor force was an important factor in the decline of economic growth," he noted.[27] There has been no indication of any dramatic improvements in labor force training and quality since then. In 1970 almost 79 percent of those completing lower secondary schools went on to upper secondary levels (see Table). This level had reached 93 percent by 1980 and inched up to 94 percent over the next decade. Those going on to higher education from the upper secondary schools reached a peak of 33 percent in the mid-1970s and then stabilized at the 30-percent level. These trends suggest a stabilization of the educational level of the Japanese labor force.

Percentage of Students by Level of School Who Advance to Schools of Higher Grade

Year	Lower Secondary	Upper Secondary	University
1960	54.9%	16.5%	3.6%
1965	67.4	24.5	4.9
1970	78.7	23.2	5.0
1975	90.0	33.1	4.9
1980	93.0	31.3	4.4
1985	93.1	30.1	5.9
1990	94.3	30.3	6.8

Source: Management and Coordination Agency, Statistics Bureau, *Japan Statistical Yearbook 1991.*

As noted above, the capital investment boom of the late 1980s drove down the rates of return of investments in plant and equipment and R&D; total factor productivity gains from providing more and more capital per worker were pushed close to zero. Therefore, investment is unlikely to come to the salvation of higher labor costs in the near future.

Productivity improvements can come from learning to do things in more efficient ways; for this to occur it is helpful to be a technological laggard. Mr. Jorgenson estimated that pure technical change contributed 2 percentage points annually to output growth in the 1960-79 period, but for the subperiod 1973 to 1979 the contribution from this source fell to 0.1 point.[28] Similarly, a study by Steve Dowrick and Duc-Tho Nguyen of the Australian National University concluded that Japan's gains from technological convergence came to an end in the 1970s.[29] Japan apparently has exhausted many of the sources of productivity change.

Returning to the point of higher labor costs, Japanese industry is unlikely to be helped much by improved labor quality, higher capital-labor ratios or rapid productivity advance. The likely outcome is that labor will take a larger share of corporate incomes. This has not happened yet, and

the current economic slowdown will mask the underlying forces in the short run. However, a rapid run-up in wages can be expected in those sectors where market conditions are least cushioned by long-term contracts; first, small firms in the services sector and then small firms in manufacturing will be hit, followed by big companies. At the same time higher nominal wages may be avoided for a while by decreasing the number of work hours per year (without wage reductions) and extending more fringe benefits. Eventually, however, the employee share of national income will rise to levels observed in other industrial countries. Over the 1981-90 period the average Japanese ratio of employee compensation to national income was 68.2 percent, a full 6 percentage points below the comparable U.S. number.[30] When output and productivity were growing rapidly, it made good economic sense to workers to accept a smaller share of output today in exchange for a much higher level tomorrow. However, when growth slows and labor is in a sellers' market, the calculus changes to favor higher rewards today. A logical outcome would be a squeeze on the share of national income going to profits, retained earnings and corporate savings.

Corporate savings (depreciation plus earnings) equaled about 90 percent of real investment between 1981 and 1986 for all Japanese companies.[31] If, as suggested, a greater share of future corporate income goes to labor, companies will be forced to go to financial markets to raise funds for investment. Financial officers and corporate decisionmakers will confront the real cost of financial capital as never before and have to compare financial costs with expected project returns. As shown by the Bank of Japan, corporate managers already are responsive to differentials on the returns to financial assets; they now will have to apply earnings tests to equipment and R&D investments.[32]

If the rate of investment falls because of lower household and corporate savings and this decline is coupled with the end of productivity catch-up, Japan's total factor productivity growth will suffer on both accounts. Moreover, given four conditions — the size of the labor force falls, the number of hours worked drops, the rate of investment declines and productivity growth slows — output growth is bound to decline.

This projected decline in economic growth rates will occur as the economy becomes more open domestically and internationally because of the continuing process of deregulation and the removal of formal and informal barriers. Due to the greater efficiency brought about by competition in formerly regulated sectors, these moves should reduce costs to both producers and consumers. The shift in national income toward workers together with more competition and efficiency will tilt the Japanese economy toward the interests of the consumer — not because of any specific policy but through the evolution of powerful economic forces.

Whether these changes also imply the elimination of Japan's aggregate trade surplus is a more knotty question. The trade balance depends on the difference between two large quantities, both of which are projected to decline: national savings and investment. What happens to the trade balance will depend on the relative rates of change in these two quantities. Since households seem to be adjusting their savings behavior more slowly than the corporate sector, investment could fall more rapidly, thus leading to an enlarged trade surplus. As households save less, the difference between exports and imports should shift toward balance; however, the process could take years. In the period of high international capital mobility during the gold-standard era some countries — such as the United Kingdom — ran current account surpluses averaging 4.5 percent of GNP for as much as a 30-year period, while other countries ran deficits as large or larger.[33]

Countries today in search of capital — Russia, Eastern Europe, the developing world, the United States — are hoping for a continued net outflow of Japanese investment capital, which means an attendant trade surplus. Those countries anxious about trade competition — Western Europe as well as the United States — are aiming for a reduction in Japan's surplus.

The main results of the ongoing transformation of the Japanese economy are clear: a contracting labor force, declining household and corporate savings rates, falling rates of investment,

ebbing productivity growth, slowing economic growth and a shift of national income to labor. Yet what effect all these developments will have on the Japanese economy still depends on sometimes unforeseen elements.

Conclusion: Cautions and Warnings

Since predictions are risky and may rest on either faulty logic, incorrect assumptions or a misunderstanding of the underlying forces, it is useful to consider alternative scenarios of the key variables that could disrupt the predictions. These indicators of predictive failure could alert analysts to other outcomes.

Household savings could continue higher than projected in response to the demand for funds elsewhere in the world; in other words, higher real interest rates outside Japan could stimulate more savings than called for by the other factors. As an example of this phenomenon, several analysts have calculated that U.S. fiscal policies in the first half of the 1980s, which resulted in the surge of the federal budget deficit, induced additional savings in Japan because of the increased global demand for capital; this induced change equaled an estimated 1.4 percent of Japanese GNP or about 2 percent of disposable income.[34]

Deregulation of inefficient sectors could release sufficient numbers of workers to counter the decline in the labor force. Certain sectors, such as agriculture as well as wholesale and retail trade, are less than half as efficient as their U.S. counterparts. Massive gains in productivity in shops, warehouses and the distribution system could provide the necessary quantity of workers to supply the rest of the economy; this one-time productivity gain, though, eventually would be overtaken by the downsizing of the labor pool.

Women are the great unused resource of Japan. Even though female labor force participation is high by the contemporary standards of advanced economies, employers in Japan make little use of women's capabilities there. In the conflict between economic and social forces this area is rife with potential for change and requires careful monitoring.

Foreigners, also, are little used by Japan's employment system. Although the number of legal and illegal foreign workers is growing rapidly, their absolute number still is only a tiny fraction of the labor force. However, economic pressures for relaxing the restrictions on immigrant labor are having a noticeable effect on law and policy. Foreign workers eventually could provide future relief to tight labor markets (see *JEI Report* No. 7A, February 21, 1992).

Finally, productivity advances could yield a gold mine. The intense competition in manufacturing in the postwar period motivated a search for production methods (and later for more effective product development procedures) that yielded the reknowned Japanese production system that now is changing the way the world makes things. This innovation, which in many ways was one of the most profound of the past 40 years, helped to transform Japanese industry. Under the pressures of the future, could there be other innovations with as startling and as profound effects?

The growth of the Japanese economy has brought it to a level today that ranks Japan among the largest and the most productive nations in the world. However, the next decade or so will be quite different from the past. Japan will not overtake the United States in terms of GNP by the turn of the century or even in 20 years as a few recent popular projections have contended. Even if the difference in the growth rates of the two economies were as great as the 1.6 percentage point differential of the 1980s, the size of Japanese output would not equal that of this country's for another 59 years.[35]

In terms of economic growth rates, investment, productivity and capital flows to the world, Japan is becoming a "regular" country. It is certainly a country of stature but not quite the economic or financial superpower proclaimed by those who were dazzled by the fireworks of the late 1980s.

Short-term events, such as recessions and bubbles, can blind one from closer attention to the fundamentals. Simple extrapolation of trends is an insufficient guide to the future. It is better to try to understand the underlying forces and how they are changing, while recognizing that the future, by its nature, is unpredictable.

For further information, contact **Arthur J. Alexander**.

NOTES

[1]Dale W. Jorgenson, "Productivity and Economic Growth in Japan and the United States," *American Economic Review*, May 1988, p. 217.

[2]Charles Yuji Horioka, "Why is Japan's Household Saving Rate So High? A Literature Survey," *Journal of the Japanese and International Economies*, IV, 1990, p. 51 (Table 1).

[3]*Ibid.* (Table 2).

[4]*Ibid.*, p. 60.

[5]F. Modigliani and A. Sterling, "Determinants of Private Saving with Special Reference to the Role of Social Security — Cross-Country Tests" in F. Modigliani and R. Hemming (eds.), *The Determinants of National Saving and Wealth* (New York, New York: Macmillian, 1983).

[6]Bank of Japan, *Recent Changes in Japan's Labor Market and Their Impact*, No. 202, May 1991, p. 5 and Chart 8.

[7]Arthur J. Alexander and Kong Dan Oh, *The Development and Structure of Consumer Credit in Japan* (N-2902) (Santa Monica, California: The Rand Corporation, June 1989), p. 40.

[8]Each of these exemptions had limits of ¥3 million (about $22,200 at ¥135=$1.00), but families often had multiple accounts so that they seldom were affected by the limits.

[9]Horioka, *op. cit.*, p. 71.

[10]Organization for Economic Cooperation and Development, *OECD Economic Surveys: Japan 1989/1990* (Paris, France: 1990), p. 117 (Table A11).

[11]"Credit Card Users Facing An Unaccustomed Crunch," *The Asian Wall Street Journal Weekly*, September 16, 1991.

[12]*Ibid.*

[13]Management and Coordination Agency, Statistics Bureau, *Japan Statistical Yearbook 1991*, Table 2-2.

[14]Bank of Japan, *op. cit.*, p. 3 and Chart 3.

[15]Edward N. Wolff, "Capital Formation and Productivity Convergence Over the Long Term," *American Economic Review*, June 1991, p. 571 (Table 2).

[16]A detailed chronology of financial market deregulation is given in Organization for Economic Cooperation and Development, *OECD Economic Surveys: Japan 1990/1991* (Paris, France: 1991), pp. 137-148 Table A7).

[17]Kent Calder, *Crisis and Compensation* (Princeton, New Jersey: Princeton University Press, 1988), pp. 440-480.

[18]These figures measure "total factor productivity," which includes capital as well as labor inputs; they apply to economywide measures of gross domestic product. See Wolff, *op.cit.*, p. 568 (Table 1).

[19]Dale W. Jorgenson and Masahiro Kuroda, "Productivity and International Competitiveness in Japan and the United States" in C.R. Hulten (ed.), *Productivity in the U.S. and Japan: Studies in Income and Wealth* (Chicago, Illinois: University of Chicago Press, 1990). See also *JEI Report* No. 4A, January 31, 1992 for the comparative results of other studies.

[20]Bank of Japan, *Corporate Financing and Business Investment under Financial Deregulation*, Special Paper No. 195, February 1991, p. 7.

[21]At the peak of the Tokyo stock market in late 1989 the price-earnings ratio was 65 — implying a 1.5 percent cost to raise financial capital through issuing stock. Wholesale prices of manufactured goods were rising 1.5 to 2 percent in the 1988-90 period. The real cost of capital raised on the stock market therefore, was -0.5 percent to zero. For price-earnings ratios for companies listed on the first section of the Tokyo Stock Exchange, see *Ibid.*, p. 28.

[22]*JEI Report* No. 4A, January 31, 1991, p. 9.

[23]Corporations historically have been net borrowers from the rest of the economy, although since the 1980s their dependence on the household sector has fallen markedly. The savings of government at all levels have fluctuated over the years, running small surpluses (on a national accounts basis) in the 1960s, accruing large deficits in the late 1970s and gradually moving into surplus in 1987.

[24]Cross-section statistical analysis of 10 industrialized nations shows a declining relationship over time between private savings and private fixed investment, with Japan possessing the highest values of both variables over the 1966-85 period. Time-series analyses of individual countries, however, show no simple correlation between the variables. See Tamim Bayoumi, "Saving-Investment Correlations: Immobile Capital, Government Policy, or Endogenous Behavior," *IMF Staff Papers*, June 1990, pp. 376-379.

[25]According to the way that national income accounts are calculated, savings minus investment always equals exports minus imports. In the very short run economic forces tend to move from the trade side of the equation to the domestic side; for example, if petroleum prices were to fall, Japanese imports would decline, the trade surplus would increase and domestic consumption would decline (savings would increase) as producers and consumers spent less for oil. Over the longer run as measured in years, however, the influence tends to move from net savings at home to an impact on the international trade sector. For example, the increase in the corporate savings rate that occurred in the 1970s translated into trade surpluses.

[26]Jorgenson, *op. cit.*, p. 218.

[27]Jorgenson, *op. cit.*, p. 219.

[28]Jorgenson, *op. cit.*, p. 218

[29]Steve Dowrick and Duc-Tho Nguyen, "OECD Comparative Economic Growth 1950-85: Catch-up and Convergence," *American Economic Review*, December 1989.

[30]The Japanese figures are from Management and Coordination Agency, Statistics Bureau, *Japan Statistical Yearbook 1991*, p. 562. The U.S. figures are from Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States 1991*, p. 435.

[31]Bank of Japan, *Corporate Management Under Continued Economic Expansion*, Special Paper No. 199, March 1991, p. 18 and pp. 53-54 (Table 15).

[32]*Ibid.*, p. 7.

[33]Bayoumi, *op. cit.*, p. 375.

[34]Jeffrey D. Sachs, "Global Adjustments to a Shrinking U.S. Trade Deficit," *Brookings Papers on Economic Activity*, No. 2, 1988, p. 642 (Table 2).

[35]The period of convergence depends on the current ratio of the two countries' GNPs and the difference in their ratio of growth. In 1990 America's GNP was 1.73 times larger than Japan's at an exchange rate of ¥135=$1.00; however, using the more realistic purchasing power parity conversion of ¥200=$1.00, the ratio was 2.56. For those who may want to insert other assumptions into the calculation, the convergence period n is: $n = (\ln U/J)/(j-u)$, where U is American GNP in the base year, J is Japanese GNP, j and u are the Japanese and American growth rates (1.5 percentage point differential is 0.015) and ln is the natural logarithm.

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The views expressed in this report are those of the author and do not necessarily represent those of the Japan Economic Institute.